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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,795	07/13/2006	Martin Howlid	14.0228-PCT-US	4505

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EXAMINER	
HUGHES, SCOTT A	

ART UNIT	PAPER NUMBER
3663	

NOTIFICATION DATE	DELIVERY MODE
06/10/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/552,795	HOWLID ET AL.	
	Examiner	Art Unit	
	SCOTT A. HUGHES	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-82* is/are pending in the application.

4a) Of the above claim(s) *3,4,10,11,17 and 31-81* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-9,12-16,18-30 and 82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 3/25/2009 have been fully considered but they are moot in view of the new grounds of rejection presented below based on Kirby (4729333) which teaches a source array, steerable deflector that controls position of the source array by changing an angle of attack of the deflector device while maintaining the source array in a substantially inline direction, and a position system.

Applicant's amendments to the claims are sufficient to overcome the rejection of claims 9, 22, and 28 under 35 U.S.C. 112 from the previous Office Action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 82 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 82 recites that “the deflector device is configured to position the source array on both sides of a center line of a towing vessel.” Claim 1, from which claim 82 depends, recites that the deflector is "an independently steerable deflector device."

From the language of claims 1 and 82, there is a single deflector device claimed. Claim 82 therefore requires that the single deflector device is configured to position the source array on both sides of a center line of a towing vessel. The specification explicitly states that if the source array will be steered to locations on both sides of the centreline of the tow vessel, then two deflector devices, one on each side of the source array, are required (See Applicant's Specification, Page 6, Lines 5-12). Therefore, there is not support in the specification for the limitation that the single deflector device claimed in claim 82 can position the source array on both sides of a center line of a towing vessel.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5, 8-9, 12-16, 18-23, and 25-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kirby (4729333).

With regard to claim 1, Kirby discloses a seismic survey system for use in water (abstract) (Figs. 1, 4-5, 7). Kirby discloses a source array 56 (Fig. 7) (Column 7, Line 52 to Column 8, Line 41). Kirby discloses an independently steerable deflector device 10 coupled to the source array 16 (Fig. 7), wherein the deflector device controls a position of the source array by changing an angle of attack of the deflector device with respect to a direction of tow while maintaining the source array in a substantially inline

direction (Figs. 4-5, 7) (Column 5, Line 21 to Column 6, Line 35; Column 7, Line 12 to Column 8, Line 28). Kirby discloses a positioning system to determine a location of the source array (Column 7, Line 53 to Column 8, Line 28).

With regard to claim 2, Kirby discloses that the source array trails the steerable deflector in the inline direction (Fig. 7).

With regard to claim 5, Kirby discloses that the positioning unit is mounted on the source array, and wherein the positioning unit provides a controller with the location of the source array (Column 7, Line 65 to Column 8, Line 28).

With regard to claim 8, Kirby discloses a computerized controller for controlling the position of the deflector device (Column 7, Line 65 to Column 8, Line 28).

With regard to claim 9, Kirby discloses that the desired position is the same position as in a previous survey (Columns 1-2; Column 7, Line 12 to Column 8, Line 28). Kirby discloses moving the source arrays with respect to the vessel in desired directions based on the vessel path.

With regard to claim 12, Kirby discloses a positioning unit attached to the source array, wherein the positioning unit provides a signal to inform the controller of a current position of the source array (Column 7, Line 12 to Column 8, Line 28).

With regard to claim 13, Kirby discloses that a source is triggered when the array is at a desired position (Columns 1-2; Column 7, Line 12 to Column 8, Line 28).

With regard claim 14, Kirby discloses that the controller is positioned on the towing vessel (Column 7, Line 12 to Column 8, Line 28).

With regard to claim 15, Kirby discloses that the deflector device comprises one or more wings 14, 16and a central body 12, wherein the one or more wings are disposed adjacent to the central body (Figs. 1-3) (Column 5, Lines 20-30).

With regard to claim 16, Kirby discloses that the wings are in a generally vertical arrangement (Fig. 1).

With regard to claim 18, Kirby discloses an actuator 61 disposed adjacent to the central body, wherein a controller sends a signal to the actuator, and wherein the actuator moves the one or more wings (Column 7, Lines 15-52).

With regard to claim 19, Kirby discloses that the actuator uses a motive force that is electric (Column 7, Lines 20-33).

With regard to claim 20, Kirby discloses that the central body and actuator are made from metal and composites (Column 5, Lines 35-40; Column 7, Lines 15-52)

With regard to claim 21, Kirby discloses that the total area of the wings is between about 1 and about 7 square meters (Column 8, Line 64 to Column 9, Line 2).

With regard to claim 22, Kirby discloses that the one or more wings are constructed from metal or composites (Column 6, Lines 1-3).

With regard to claim 23, Kirby discloses that the one or more wings are constructed of a metal skin covering a foam core (Column 5, Line 62 to Column 6, Line 3).

With regard to claim 25, Kirby discloses that the source array comprises one or more adjacent subarrays 56 coupled by a distance rope (Fig. 7).

With regard to claim 26, Kirby discloses a second independently steerable deflector coupled to a second source array (Column 7, Lines 53-65).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby as applied to claims 1-2 and 5 above, and further in view of Regnault (5319609).

With regard to claims 6-7, Kirby does not disclose that the positioning system is a satellite positioning system. Kirby discloses using an electronic range positioning system (Column 8), but not a satellite positioning system. Regnault teaches that it is known in the art of marine seismic surveying to use a GPS satellite positioning system to determine location of marine seismic survey equipment (Column 3, Line 65 to Column 4, Line 11). It would have been obvious to modify Kirby to include a GPS satellite positioning system as taught by Regnault instead of the electronic positioning system in order to obtain three dimensional coordinates of the source array using the GPS satellite network.

Claim 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby as applied to claim 23 above, and further in view of George (4719987).

With regard to claim 24, Kirby does not disclose that the skin is titanium or stainless steel. George discloses that it is known in the art of marine seismic surveying to use steel in the components of the arrays (Column 1). Therefore, it would be obvious to one of ordinary skill in the art to use a steel covering as this is a known material for components of in-water seismic survey equipment.

Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirby as applied to claims 1-2, 5, 8-9, 12-16, 18-23, and 25-26 above, and further in view of Dolengowski (4890568).

With regard to claim 27, Kirby does not disclose an acoustical transducer and receiver coupled to the source array, and a controller, wherein the controller adjusts the deflector device to steer clear of an obstruction located by the acoustical transducer and receiver. Dolengowski teaches that acoustical transducers and receivers can be used with marine seismic arrays in order to locate and navigate around obstructions and obstacles and to avoid entanglement of the equipment in the array (Column 2, Line 60 to Column 3, Line 42). It would have been obvious to modify Kirby to include an acoustical transducer and receiver that feed information to the controller as taught by Dolengowski in order to locate and navigate around obstructions and obstacles and to avoid entanglement of the equipment in the array.

With regard to claim 28, Dolengowski teaches that the acoustical transducer and receiver are sonar devices (Column 2, Line 60 to Column 3, Line 42).

With regard to claim 29, Dolengowski teaches that the obstruction is moored devices, floating devices, lead in cables, umbilicals, or towed equipment (Column 2, Line 60 to Column 3, Line 42).

With regard to claim 30, Dolengowski teaches that the acoustic transducer and receiver are pointed in a given direction (Column 2, Line 60 to Column 3, Line 42).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SCOTT A. HUGHES whose telephone number is (571)272-6983. The examiner can normally be reached on M-F 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. A. H./
Examiner, Art Unit 3663

/Jack W. Keith/
Supervisory Patent Examiner, Art Unit 3663